

formed using a single wrap of reinforcing ribbon having overlapping end portions. A typical ribbon size for use in V-ribbed belts would be 0.750 inches wide by 0.030 inches thick and preferably contain four longitudinal tynes of high strength fibers as opposed to three in the narrower ribbon 70 shown in FIG. 5E. The ribbon is disposed in channel 318 which measures about 0.680 inches wide by about 0.050 inches high. The outer length of belt material is about 0.840 inches wide by 0.336 inches thick. As seen in FIG. 6, the slit 320 preferably would be of a step configuration so as to form overlapping flaps 321A and 321B to facilitate the extrusion of the outer length of material 312.

Additional alternative embodiments of belt 10 are illustrated in FIGS. 3 and 7. FIG. 3 illustrates a variation of the present invention wherein the outer length of belt material 250 is formed by extrusion with a plurality of reinforcing cords 252 extending longitudinally therethrough for unusual applications requiring an exceptionally strong belt. Cords 252 could be formed of Kevlar or another strong, yet flexible material. FIG. 3 also illustrated a separate modification to the outer length of belt material wherein a nylon webbing 256 is formed in the lower surface 258 of channel 18. Webbing 256 would be embedded in surface 258 during the extrusion of the outer belt length 250 and would partially project into the channel so as to provide surfaces within channel 18 to which the adhesive 25 might more readily attach than merely the smooth channel walls. It has been found, however, that successful product can be made utilizing the above-described dual fiber reinforcing ribbon 14 without the need for the additional webbing. It is to be understood that the use of the webbing 256 and reinforcing cords 250 illustrated in FIG. 3 could be employed separately from each other and are illustrated in the same drawing for illustrative purposes only.

FIG. 7 illustrates yet another alternative configuration of belt 10 wherein the outer length of material is of a substantially cylindrical configuration for the manufacture of endless fractional belts for non-automotive applications. Various other changes and modifications may be made in carrying out the present invention without departing from the spirit and scope thereof. Insofar as these changes and modifications are within the purview of the appended claims, they are considered as part of the present invention.

I claim:

1. An endless belt for use in power transmission comprising an outer length of flexible tear-resistant material having mating extended ends so as to form a closed loop and defining an endless channel extending longitudinally therethrough, an inelastic enforcing ribbon of a flexible tear-resistant material disposed within said channel, said ribbon defining first and second ends and extending across said mating ends of said outer length of material and twice about said loop defined by said outer length of material so as to define two layers of reinforcing ribbon within said outer length of material, said first end of said ribbon being disposed adjacent to said second end thereof and an adhesive disposed within said channel about said layers of ribbon and securing together said layers of ribbon and securing said ribbon to said outer length of material to maintain said outer length of material in said closed loop.

2. The endless belt of claim 1 wherein said ribbon is of a braided construction and comprised of a highly durable and inelastic material encased in an adhesive cooperative outer material.

3. The endless belt of claim 1 wherein said ribbon is of a braided construction and comprised of at least two different materials, one of said materials being highly durable and

inelastic, a second of said materials being substantially more cooperative with said adhesive than said first material and being braided about said first material for securing said ribbon together and to said outer length of material.

4. The endless belt of claim 1 wherein said adhesive exhibits an elongation factor of over three hundred percent.

5. The endless belt of claim 4 wherein said adhesive exhibits an elongation factor of over three hundred percent.

6. A belt assembly for forming an endless belt of a desired size for use in power transmission, said assembly comprising:

an outer length of flexible tear-resistant material defining an outer surface, an inner surface, a first end, a second end, an interior channel extending longitudinally therethrough, and a slit extending the length thereof from said outer surface to said channel;

an adhesive adapted to be injected through said slit into said channel throughout the length thereof; and

an inelastic reinforcing ribbon formed of a flexible tear-resistant material adapted to be inserted into said channel through said slit such that upon injecting said adhesive into and along said channel, placing said ends of said outer length of material in an abutting relationship and drawing said ribbon into said channel through said slit and about said outer length of material so that the ends of said ribbon are disposed in an adjacent position substantially equidistantly between said ends of said outer length of material and said ribbon extends in a flat disposition within said channel twice about said outer length of material and across the abutting ends thereof so as to define two layers of reinforcing ribbon within said adhesive in said channel, said ribbon is secured together and to said outer length of material by said adhesive, defining a continuous belt of uniform construction.

7. The endless belt of claim 6 wherein said ribbon is of a braided construction and comprised of at least two different materials, one of said materials being highly durable and inelastic, a second of said materials being substantially more cooperative with said adhesive than said first material and being braided about said first material for securing said ribbon together and to said outer length of material.

8. A belt assembly for forming an endless belt of a desired size for use in power transmission, said assembly comprising:

an outer length of flexible tear-resistant material defining an outer surface, an inner surface, a first end, a second end, an interior channel extending longitudinally therethrough, and a slit extending the length thereof from said outer surface to said channel;

an adhesive adapted to be injected through said slit into said channel throughout the length thereof; and

an inelastic reinforcing ribbon comprised of a highly durable and inelastic inner portion and a relatively non-abrasive and adhesive cooperative outer portion, said ribbon being adapted to be inserted into said channel through said slit such that upon injecting said adhesive into and along said channel, placing said ends of said outer length of material in an abutting relationship and drawing said ribbon about said outer length of material and into said channel through said slit so that the ends of said ribbon are disposed in an adjacent position substantially equidistantly between said ends of said outer length of material and said ribbon extends in a flat disposition within said channel about said outer length of material and across the abutting ends thereof

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within said adhesive, said ribbon is secured to said outer length of material by said adhesive, defining a continuous belt of uniform construction.

9. An endless belt for use in power transmission comprising an outer length of flexible tear-resistant material having mating extended ends so as to form a closed loop and defining an endless channel extending longitudinally therethrough, an inelastic reinforcing ribbon of a flexible tear-resistant material disposed within said channel and extending about said loop defined by said outer length of material, said ribbon defining first and second end portions and extending across said mating ends of said outer length of material with said first end portion of said ribbon overlapping said second end portion thereof, and an adhesive disposed within said channel about said ribbon securing together said end portions of said ribbon to maintain said outer length of material in said closed loop.

10. The belt of claim 9 wherein the mating ends of said outer length of flexible tear-resistant material define a first location on said closed loop and said first end portion of said reinforcing ribbon overlaps said second end portion thereof along a second location on said closed loop, said first location being substantially diametrically opposed across said loop from said second location.

11. The endless belt of claim 9 wherein said ribbon is comprised of a highly durable and inelastic inner portion and a relatively non-abrasive and adhesive cooperative outer portion.

12. The endless belt of claim 9 wherein said ribbon is of a braided construction and comprised of at least two different materials, one of said materials being highly durable and inelastic, a second of said materials being substantially more cooperative with said adhesive than said first material and being braided about said first material for securing said ribbon to said outer length of material.

13. An endless belt for use in power transmission comprising an outer length of flexible tear-resistant material

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having mating extended ends and forming a closed loop, said length of material defining an endless channel extending longitudinally therethrough, an inner surface, and outer surface, and a slit extending the length of said channel between said channel and said outer surface, an inelastic reinforcing ribbon of a flexible tear-resistant material disposed within said channel and extending about said loop defined by said outer length of material, said ribbon defining first and second end portions and extending across said mating ends of said outer length of material with said first end portion of said ribbon overlapping said second end portion thereof, and an adhesive disposed within said channel about said ribbon securing together said end portions of said ribbon to maintain said outer length of material in said closed loop.

14. The endless belt of claim 13 wherein the mating ends of said outer length of flexible tear-resistant material define a first location on said closed loop and said first end portion of said reinforcing ribbon overlaps said second end portion thereof along a second location on said closed loop, said first location being substantially diametrically opposed across said loop from said second location.

15. The endless belt of claim 13 wherein said ribbon is comprised of a highly durable and inelastic inner portion and a relatively non-abrasive and adhesive cooperative outer portion.

16. The endless belt of claim 13 wherein said ribbon is of a braided construction and comprised of at least two different materials, one of said materials being highly durable and inelastic, a second of said materials being substantially more cooperative with said adhesive than said first material and being braided about said first material for securing said ribbon to said outer length of material.

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